Total No. of Questions – [09] Total No. of Printed Pages: 03

G.R. No.	

P118-123(ESE)

DECEMBER 2018 / END-SEM

F. Y. M. TECH. (WREE) (SEMESTER - I)

COURSE NAME: WRSP (ELECTIVE I)

COURSE CODE: (CVPA11183A)

(PATTERN 2018)

Time: [3 Hour] [Max. Marks: 50]

(*) Instructions to candidates:

1) **Answer Q.1, Q.2, Q.3, Q.4 OR Q.5, Q.6 OR Q.7, Q.8 OR Q.9**
2) **Figures to the right indicate full marks.**
3) **Use of scientific calculator is allowed**
4) **Use suitable data where ever required**

Q.1) a)	What is the demand for drinking water in urban, sub urban and rural sector ? why it is necessary to have different demand for drinking water in these respective section ?	3
	OR	
b)	Write the demand of water for irrigation and navigation sector	3
Q.2) a)	What is water budget ? represent one sample water budget of any gram panchayat.	3
	OR	
b)	Enlist any 6 presently active state water laws.	3
Q.3) a)	Enlist the advantages of ENB and compartment bunding	2
	OR	
b)	Write the advantages of terracing and farm pond	2
Q.4) a)	In a farm, the transplantation of rice takes 16 days, and the total depth of water required by the crops 60cm on the field. During this transplantation period of 16 days, rain starts falling and about 10 cm of rain is being utilized to fulfil the rice demand. Find duty of irrigation water required for rice during transplantation period. (a) Assuming 25% losses of water in water courses, find the duty of water at the head	4

	of water course.(b) Find the duty of water at the head of distributary, assuming 15% losses from the distributary head to the water course head.	
b)	What are the different conflicts in reservoir planning ? explain in detail	6
c)	Write the flood mitigation measures and their feasibility according to the filed requirements .	4
	OR	
Q.5) a)	A pump is installed on a well to lift the water and to irrigate rice crop, sown over three hectors of land. If duty for rice is 864 hectares/cumec on the field and the pump efficiency is 48%;determine the minimum required input (H.P) of the pump , if the lowest well water level is 8 meters below the highest portion of the field. Assume negligible field canal losses.	4
b)	Write the drought mitigation measures ? explain one case study with conclusions.	4
c)	Classify the reservoirs according the Bureau of Indian Standards code IS: 4410 (part 6)1983. Also enlist the functions of the different reservoirs enlisted earlier in the first part of this question.	6
Q. 6) a)	What are the different costs involved in the economic analysis of any Water resource development project?	4
b)	What is the equipment present worth about 10% interest of 3 investments of Rs. 60,00,000, one made now , one made at the end of 3 years and one at last of 10 years from now?	4
c)	Explain in detail – a) Single payment factor , b) uniform annual series factor , c) Uniform gradient series factor	6
	OR	
Q. 7) a)	What are different benefits ? Explain in depth the tangible and intangible benefits.	4
b)	What is selection of an alternative in cost benefit analysis ? Give present worth method, annual cost method, rate of return method and benefit cost method in detail.	6
c)	Total cost of lining for certain canal is Rs. 10 million. If annual benefit resulting from the lining amount to Rs. 1 million. Determine whether the lining would be economical and feasible ? . Rate of interest is 8% per annum and life of lining is considered to be 20 years. If the project is to feasible then determine the estimated life of lining which should	4

		render it economically.	
Q. 8) a)		What is basin planning ? why it is necessary ? Elaborate it one with one sample case study.	**6**
	b)	Explain in detail the different aspects of ground water evaluation.	**8**
		OR	
Q. 9) a)		What is inter basin transfer of water ? Explain in depth with its feasibility norms, advantages and disadvantages .	**6**
	b)	What do you mean by 'conjunctive use of ground water' ?why it is necessary? Explain any two methods of it.	**8**